

**Suggested Answers to Review and Discussion Questions: Lesson 10**

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1. The clients should give you a copy of their income and expense statements for the last three years showing their rental income by suite and the renewal dates. All expenses should be itemized with explanations of what they apply to in the operation of the building.

The information can be verified by reference to an analysis of market comparables for both rentals and expenses. Also, suppliers of expense items can be contacted for information on typical usage levels and rates for the subject property type.

2. (a) The two main reasons why it is necessary to reconstruct an operating statement are, expense variations between years and excluded items.

Expenses in a current year can benefit the property for several years to come, and alternatively, expenses necessary for the current year can be deferred. The appraiser must take the owner's operating statement and "smooth out" or stabilize the operating expenses to a typical amount that is reasonable for a given year. This may include an amortized amount for short-lived items and any expenses not included by the owner, e.g., management fee. This will result in a stabilized operating statement that reflects the current net operating income of a particular year.

The appraiser must also remove any items from the owner's statement that are related to the cost of ownership and not the cost of operating the building. These may include items such as depreciation, mortgage payments, income tax, or capital expenditures. (Note that the distinction between capital expenditures and short-lived items is subjective and requires a judgment call from the appraiser depending on the circumstances).

- (b) Vacancy and collection loss must be estimated using information from the property itself and from an examination of the market. Influences on vacancy and bad debt allowances include past performance of the property, age and quality of the property, economic state of the area, vacancies in comparable buildings, type of tenants in the subject, and the length of leases and rental levels. Sources of information for determining a market vacancy rate include CMHC (for residential properties), local property managers, real estate boards, and real estate research firms.
3. The parking spaces form part of the property's income potential (ancillary income) and should be projected as such along with an appropriate vacancy and collection loss factor applied to it.
4. (a) An owner who is not paying a management fee is unlikely to include this fee in their operating expense statements. However, an appraisal requires an estimate of stabilized income, which means that all standard or typical expenses must be included whether they are currently being paid or not. If other properties used as comparables have subtracted a management fee in computing net operating income, then the subject property must be similarly treated. The management fee to apply would be based on the market rate for typical, competent, and professional management (usually expressed as a percentage of the effective gross income). However, if the market capitalization rate was developed from comparables that did not include a management fee in determining income, then it would be consistent not to include management fees as an expense for the subject property - assuming that the subject's management fee and that of each comparable were equally typical of the market.

- (b) The efficiency of management is an intangible that is not specifically addressed in the reconstructed operating statement. However, in estimating management fees, there is an assumption that management is typical, competent, and professional. Furthermore, in estimating market rents, vacancy levels, and all operating expenses, there is an implicit assumption that the management efficiency is equal to whatever is standard in the market for the given type of property. This can be seen when the appraiser compares vacancy levels or operating expense percentages with industry averages to see if they are within a reasonable range.
5. (a) Whether to treat repairs and maintenance as a capital or operational expense is often a matter of the appraiser's judgment. If it is simple maintenance that does not have very long-lasting value, then it is more likely an operating expense that must be stabilized. These expenses tend to vary from year to year and may provide a benefit that lasts beyond the current year. However, net operating income must be standardized for a typical year, and therefore these expenses must be amortized over the period they provide benefit. If it is beyond simple maintenance and will increase the property's income-producing potential or economic life over the long-term, then it is likely a capital expense that must be capitalized. These capital expenses are added to the value of the building directly and not included as an operating expense.
- (b) Fixed expenses are those that do not vary with occupancy, and that prudent management will pay whether the property is occupied or vacant, e.g., property taxes. Variable expenses are those that generally vary with the level of occupancy or the extent of services provided, e.g., hydro. A reserve for replacement is an allowance that provides for the periodic (typically future) replacement of building components that wear out more rapidly than the building itself, and must be replaced during the building's economic life. Components are typically the same as those analyzed as short-lived incurable in the depreciation analysis, e.g., the roof cover.
6. In appraising a property, the appraiser must estimate the net operating income for the coming year, i.e., for the next 12 months. If a building is being appraised as of September 1 and the appraiser knows that property taxes are relatively stable, then it would not make a significant difference whether this year's taxes or next year's taxes were used. However, if the appraiser knows that taxes are going up significantly, then the taxes for the coming year must be estimated. Likewise, if a special tax levy will end this year, then property taxes will be lower next year and must also be estimated. This logic holds true for all expenses, as the appraiser must always attempt to use whatever information that prospective purchasers consider important for income-producing properties, this would usually be the property's potential income in coming years.

NOTE: The above answer assumes that property taxes are due and payable before September 1.

7. In appraisal practice, the provision for future depreciation (recapture or recovery) of capital invested in the improvements is an integral part of the rate used in capitalization. It will be seen that double depreciation would result by its inclusion as an item in the expense statement, and as a component of the capitalization rate.

An owner's expense statement usually includes depreciation (or capital cost allowance) in order to decrease the owner's taxable net income. This depreciation expense is a factor in ownership and is not necessary for the operation of the building. Furthermore, the depreciation calculation is specific to each individual investor and cannot be generalized for the market as a whole.

8. (a) The income approach is the most significant approach in the valuation of income-producing properties. It is also a key approach for owner-occupied income properties, which also would be strongly based on the direct comparison approach. Like any other approach to value, the income approach requires the availability of adequate, relevant market data - sale prices and income and expense data. Even older buildings on income-producing properties are good candidates for valuation using this approach. Methodologies in the income approach provide excellent tools to assist in appraising and evaluating new and proposed real estate development projects through rental income and expense projections and analysis. Rental income generally reflects all classes of depreciation and amenities appropriate to use for the appraisal of properties designed primarily for producing investment income. If a component is an example of functional obsolescence, then normally no rent is generated for the component.

Buyers of income/investment real estate often think in terms of cap rate or an income multiplier. So, these are readily accepted approaches in the income-producing property market.

Capitalization rates convert net income (after deduction of appropriate expenses from income) into an indication of value. It can be difficult to select an appropriate capitalization rate from the market. Even a small change in the rate can have a significant impact on the estimate of value. Accurately estimating the stream of income and its duration poses a difficulty.

When converting gross income (whether potential or effective gross income) into a value indication, multipliers can be used. If relying on income multipliers, the properties analyzed must be comparable to the subject property and to one another in terms of physical, locational, and investment characteristics. Properties with similar, or even identical, multipliers can have very different operating expense ratios and therefore, may not be comparable for valuation purposes. Since the income multiplier does not include expense data, it is important to test the comparability of market data using the operating expense ratio.

A gross income multiplier is preferred to a gross rent multiplier as the former is based on rent from the property, and not from other sources. The appraiser must use similar income data to derive the multiplier for each transaction. Always compare apples to apples. Either the potential gross income or the effective gross income can be used to develop a multiplier. Whichever is used, the measure must be used consistently throughout the analysis in order to produce reliable results.

- (b) An appropriate answer to this question should assess whether the income approach is more concerned with the real estate - the physical assets of land, building and site improvements; or with real property - the property rights and intangible financial benefits received from net income. While the direct comparison and cost approaches focus primarily on the physical existence of the real estate, the income approach is concerned with potential income, expenses, and conversion of the net income into an indication of capital value. For the income approach, it does not matter whether the cash flow is created by residential, commercial, or industrial real estate - it is the cash flow itself, and its predictability and reliability into the future that creates the value sought by the income approach.
- (c) Direct capitalization takes the current income potential of a property and converts this expected income flow into an estimate of value. The level of value that results from this income depends on the return or yield that is expected in the market for this type of property. This return, or capitalization rate, can be determined from market evidence using the sale prices of similar, recently sold properties and the income that was forecasted by the purchasers. The capitalization rates from these sales indicate the return that market participants require in order to compensate them for the risk and effort involved in investing their money in real estate as compared to other types of investments.

- (d) Overall capitalization rates use net operating income to estimate value, while gross income multipliers use effective gross income. By using net operating income, the overall capitalization rate produces a value estimate that considers operating expenses. As a result, this method can take into account variations in expenses that may occur between properties. In contrast, the gross income multiplier can be an effective valuation tool only if all comparables have similar operating expense ratios.
9. Correction noted. The question is based on Figure 10.2. The returns in the retail and office appear to be trending upwards going into 2017, while industrial cap rates have dropped. Investor sentiment for industrial properties seems to be changing in the Vancouver market in the last decade. Industrial cap rates have been trending down so that by 2017, their rates of return are matching those rates evident in the other investment sectors. This may show increased demand for industrial properties, which drives up prices and reduces cap rates. It could be that the industrial sector has strengthened, with more businesses opening and new opportunities. Or it may be that the hot Vancouver market, relatively “cheap” industrial land is the final sector to be bid up; e.g., industrial land is being sought for other uses, with developers speculatively buying it in anticipation of future rezoning and change of use.

10. **RECONSTRUCTED STATEMENT**

Apartment Rental Income		
7 1BR apts. @ \$1,000 per month	\$7,000	
3 2BR apts. @ \$1,500 per month	<u>\$4,500</u>	
Total Rent per month	\$11,500	
Potential Gross Rent per year		\$138,000
Ancillary Income		
Parking rent 10 spaces @ \$35 × 12 months		\$4,200
Laundry income 10 units @ \$15 × 12 months		<u>\$1,800</u>
<b>POTENTIAL GROSS INCOME</b>		\$144,000
Vacancy & bad debt allowance @ 5%		<u>\$7,200</u>
<b>EFFECTIVE GROSS INCOME</b>		<b>\$136,800</b>
Reconstructed Expenses		
Property Taxes	22,000	
Repairs @ \$1,000 per unit average	10,000	
Fuel	6,000	
Electricity, public spaces	700	
Water	850	
Redecorating (2 units)*	1,200	
Outside painting	333	
Insurance premium (1 year)	2,550	
Exterminator	400	
Garbage removal	1,000	
Miscellaneous supplies	350	
Decorating public spaces / interior halls	500	
Management @ 4% EGI**	<u>5,472</u>	
Total Expenses		<u>\$51,355</u>
<b>NET OPERATING INCOME</b>		<b>\$85,445</b>

**\*NOTE:**

\* The 10 units in the building need decorating every 5 years (10 units / 5years).

\*\*The management fee can be excluded as an expense only if comparable properties used to determine the capitalization rate are owner managed. The analysis of capitalization rates should be consistent with the analysis of the incomes and expenses.

**11. RECONSTRUCTED OPERATING STATEMENT**

<b>Potential Gross Income</b>	
12 Apartments @ \$2,400 per month	\$28,800
Rental Income (for the year)	\$345,600
Vacancy and collection loss @ 4%	<u>\$13,824</u>
Effective Gross Income	\$331,776
 <b>Reconstructed Expenses</b>	
Property taxes (\$3,000,000 × .0102 mills)	\$30,600
Management fee (5% of EGI)	16,589
Water	1,200
Fire insurance (1 year)	1,400
Elevator contract	1,200
Superintendent's salary	8,000
Pool and grounds maintenance	5,000
Miscellaneous maintenance	800
Electricity	750
Legal and audit	1,325
Supplies	500
EI & CPP	300
Regular maintenance	3,600
Public area and exterior painting	1,400
Decorate 3 suites (12 suites / 4 years)	<u>6,000</u>
Total Expenses	<u>\$ 78,664</u>
 <b>Net Operating Income</b>	 \$253,112

12.  $MV = NOI \div OCR$ ; therefore,

$NOI = OCR \times MV$   
 $NOI = 0.045 \times \$3,800,000 = \$171,000$

13.  $NOI = 0.7 \times \$325,000 = \$227,500$

$MV = NOI \div OCR$   
 $MV = \$227,500 \div 0.05$   
 $MV = \$4,550,000$

14.  $MV = NOI \div OCR$ ; therefore,

$OCR = NOI \div MV$   
 $OCR = \$275,000 \div \$4,800,000$   
 $OCR = 5.73\%$

15.	(a)	Potential Gross Income	\$250,000
		<u>Less: Vacancy (5%)</u>	<u>-12,500</u>
		Effective Gross Income	\$237,500
		<u>Less: Operating Expenses</u>	<u>-120,000</u>
		Net Operating Income	\$117,500

GIM = Sale Price ÷ Effective Gross Income  
 GIM = \$2,000,000 ÷ \$237,500 = 8.4 times

(b) Operating Expense Ratio = Operating Expenses ÷ Effective Gross Income  
 Operating Expense Ratio = \$120,000 ÷ \$237,500 = 50.5%

(c)  $R_o = \$117,500 \div \$2,000,000 = 5.875\%$

16. **OPERATING STATEMENT OF A 35-UNIT APARTMENT**

**POTENTIAL GROSS INCOME**

**Apartment Rental Income (Annual)**

25 One Bedroom units @ \$800 per month	\$240,000
8 Two Bedroom units @ \$1,100 per month	\$105,600
2 Three Bedroom units @ \$1,300 per month	<u>\$31,200</u>

<b>TOTAL POTENTIAL GROSS RENTAL INCOME</b>	<b>\$376,800</b>
Less: Allowance for Vacancy/Collection @ 1%	<u>- 3,768</u>
	<b>\$373,032</b>

**Ancillary Income**

Parking 35 spaces @ \$25 per month	\$ 10,500	
Less: Vacancy at 25%	<u>- 2,625</u>	\$ 7,875

Laundry \$550 × 12 months	<u>\$ 6,600</u>	<u>\$ 6,600</u>
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<b>EFFECTIVE GROSS INCOME</b>	<b>\$387,507</b>
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**LESS OPERATING EXPENSES**

Property taxes	\$ 33,000	8.52%
Insurance	\$ 9,750	2.52%
Annual elevator	\$ 7,000	1.81%
Water	\$ 8,000	2.06%
Electricity & fuel	\$ 23,000	5.94%
Garbage	\$ 7,520	1.94%
Caretaker salary	\$ 25,000	6.45%
Caretaker free suite	\$ 13,200	3.41%
Supplies and sundry	\$ 14,800	3.82%
Miscellaneous repairs	\$ 12,500	3.23%
Management fee (5% of EGI)	\$ 19,375	5.00%

<b>TOTAL OPERATING EXPENSES</b>	<b><u>\$ 173,145</u></b>	<b><u>44.70</u></b>
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<b>NET ANNUAL OPERATING INCOME</b>	<b>214,362</b>	<b>55.30%</b>
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